SEQUENCE LISTING

<110> Gronborg, Mette
Kusk, Philip
Blom, Nikolaj
Nordahl Petersen, Thomas
Johansen, Teit
Brunak, Soren
Wahlberg, Lars

<120> Therapeutic use of a growth factor, NsG33

<130> 19313-015 NATL

<140> To be filled in
<141> 2006-09-30

<150> PCT/EP2005/051431
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<150> DK PA 2004 00510
<151> 2004-03-30

<150> US 60/575,086
<151> 2004-05-28

<150> DK PA 2004 00843
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<170> PatentIn version 3.2

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atg ggg ttc ccg gcc gcg gcg ctg ctc tgc gcg ctg tgc tgc ggc ctc      165
Met Gly Phe Pro Ala Ala Ala Leu Leu Cys Ala Leu Cys Cys Gly Leu
1               5                   10                  15

ctg gcc ccg gct gcc cgc gcc ggc tac tcc gag gag cgc tgc agc tgg      213
Leu Ala Pro Ala Ala Arg Ala Gly Tyr Ser Glu Glu Arg Cys Ser Trp
            20                  25                  30

agg ggc agc ggc ctc acc cag gag ccc ggc agc gtg ggg cag ctg gcc      261
Arg Gly Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Ala
        35                  40                  45

ctg gcc tgt gcg gag ggc gcg gtt gag tgg ctg tac ccg gct ggg gcg      309
Leu Ala Cys Ala Glu Gly Ala Val Glu Trp Leu Tyr Pro Ala Gly Ala
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ctg cgc ctg acc ctg ggc ggc ccc gat ccc aga gcg cgg ccc ggc atc      357
Leu Arg Leu Thr Leu Gly Gly Pro Asp Pro Arg Ala Arg Pro Gly Ile
65                  70                  75                  80

gcc tgt ctg cgg ccg gtg cgg ccc ttc gcg ggc gcc cag gtc ttc gcg      405
Ala Cys Leu Arg Pro Val Arg Pro Phe Ala Gly Ala Gln Val Phe Ala
                85                  90                  95
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gag cgc gca ggg ggc gcc ctg gag ctg ctg ctg gcc gag ggc ccg ggc      453
Glu Arg Ala Gly Gly Ala Leu Glu Leu Leu Leu Ala Glu Gly Pro Gly
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ccg gca ggg ggc cgc tgc gtg cgc tgg ggt ccc cgc gag cgc cgg gcc      501
Pro Ala Gly Gly Arg Cys Val Arg Trp Gly Pro Arg Glu Arg Arg Ala
        115                 120                 125

ctc ttc ctg cag gcc acg ccg cac cag gac atc agc cgc cgc gtg gcc      549
Leu Phe Leu Gln Ala Thr Pro His Gln Asp Ile Ser Arg Arg Val Ala
    130                 135                 140

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Ala Phe Arg Phe Glu Leu Arg Glu Asp Gly Arg Pro Glu Leu Pro Pro
145                 150                 155                 160

cag gcc cac ggt ctc ggc gta gac ggt gcc tgc agg ccc tgc agc gac      645
Gln Ala His Gly Leu Gly Val Asp Gly Ala Cys Arg Pro Cys Ser Asp
                165                 170                 175

gct gag ctg ctc ctg gcc gca tgc acc agc gac ttc gta att cac ggg      693
Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His Gly
            180                 185                 190

atc atc cat ggg gtc acc cat gac gtg gag ctg cag gag tct gtc atc      741
Ile Ile His Gly Val Thr His Asp Val Glu Leu Gln Glu Ser Val Ile
        195                 200                 205

act gtg gtg gcc gcc cgt gtc ctc cgc cag aca ccg ccg ctg ttc cag      789
Thr Val Val Ala Ala Arg Val Leu Arg Gln Thr Pro Pro Leu Phe Gln
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gcg ggg cga tcc ggg gac cag ggg ctg acc tcc att cgt acc cca ctg      837
Ala Gly Arg Ser Gly Asp Gln Gly Leu Thr Ser Ile Arg Thr Pro Leu
225                 230                 235                 240

cgc tgt ggc gtc cac ccg ggc cca ggc acc ttc ctc ttc atg ggc tgg      885
Arg Cys Gly Val His Pro Gly Pro Gly Thr Phe Leu Phe Met Gly Trp
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agc cgc ttt ggg gag gcc cgg ctg ggc tgt gcc cca cga ttc cag gag      933
Ser Arg Phe Gly Glu Ala Arg Leu Gly Cys Ala Pro Arg Phe Gln Glu
            260                 265                 270

ttc cgc cgt gcc tac gag gct gcc cgt gct gcc cac ctc cac ccc tgc      981
Phe Arg Arg Ala Tyr Glu Ala Ala Arg Ala Ala His Leu His Pro Cys
        275                 280                 285

gag gtg gcg ctg cac tga ggggctgggt gctggggagg ggctggtagg           1029
Glu Val Ala Leu His
    290

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35 40 45

Leu Ala Cys Ala Glu Gly Ala Val Glu Trp Leu Tyr Pro Ala Gly Ala
50 55 60

Leu Arg Leu Thr Leu Gly Gly Pro Asp Pro Arg Ala Arg Pro Gly Ile
65 70 75 80

Ala Cys Leu Arg Pro Val Arg Pro Phe Ala Gly Ala Gln Val Phe Ala
85 90 95

Glu Arg Ala Gly Gly Ala Leu Glu Leu Leu Leu Ala Glu Gly Pro Gly
100 105 110

Pro Ala Gly Gly Arg Cys Val Arg Trp Gly Pro Arg Glu Arg Arg Ala
115 120 125

Leu Phe Leu Gln Ala Thr Pro His Gln Asp Ile Ser Arg Arg Val Ala
130 135 140

Ala Phe Arg Phe Glu Leu Arg Glu Asp Gly Arg Pro Glu Leu Pro Pro
145 150 155 160

Gln Ala His Gly Leu Gly Val Asp Gly Ala Cys Arg Pro Cys Ser Asp
165 170 175

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Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His Gly
            180                 185                 190

Ile Ile His Gly Val Thr His Asp Val Glu Leu Gln Glu Ser Val Ile
        195                 200                 205

Thr Val Val Ala Ala Arg Val Leu Arg Gln Thr Pro Pro Leu Phe Gln
    210                 215                 220

Ala Gly Arg Ser Gly Asp Gln Gly Leu Thr Ser Ile Arg Thr Pro Leu
225                 230                 235                 240

Arg Cys Gly Val His Pro Gly Pro Gly Thr Phe Leu Phe Met Gly Trp
                245                 250                 255

Ser Arg Phe Gly Glu Ala Arg Leu Gly Cys Ala Pro Arg Phe Gln Glu
            260                 265                 270

Phe Arg Arg Ala Tyr Glu Ala Ala Arg Ala Ala His Leu His Pro Cys
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Glu Val Ala Leu His
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Val Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly
        35                  40                  45

Pro Asp Pro Arg Ala Arg Pro Gly Ile Ala Cys Leu Arg Pro Val Arg
    50                  55                  60
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Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg Ala Gly Gly Ala Leu
65                  70                  75                  80

Glu Leu Leu Leu Ala Glu Gly Pro Gly Pro Ala Gly Gly Arg Cys Val
                85                  90                  95

Arg Trp Gly Pro Arg Glu Arg Arg Ala Leu Phe Leu Gln Ala Thr Pro
            100                 105                 110

His Gln Asp Ile Ser Arg Arg Val Ala Ala Phe Arg Phe Glu Leu Arg
        115                 120                 125

Glu Asp Gly Arg Pro Glu Leu Pro Pro Gln Ala His Gly Leu Gly Val
    130                 135                 140

Asp Gly Ala Cys Arg Pro Cys Ser Asp Ala Glu Leu Leu Leu Ala Ala
145                 150                 155                 160

Cys Thr Ser Asp Phe Val Ile His Gly Ile Ile His Gly Val Thr His
                165                 170                 175

Asp Val Glu Leu Gln Glu Ser Val Ile Thr Val Val Ala Ala Arg Val
            180                 185                 190

Leu Arg Gln Thr Pro Pro Leu Phe Gln Ala Gly Arg Ser Gly Asp Gln
        195                 200                 205

Gly Leu Thr Ser Ile Arg Thr Pro Leu Arg Cys Gly Val His Pro Gly
    210                 215                 220

Pro Gly Thr Phe Leu Phe Met Gly Trp Ser Arg Phe Gly Glu Ala Arg
225                 230                 235                 240

Leu Gly Cys Ala Pro Arg Phe Gln Glu Phe Arg Arg Ala Tyr Glu Ala
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Ala Arg Ala Ala His Leu His Pro Cys Glu Val Ala Leu His
            260                 265                 270
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35 40 45

Asp Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His
50 55 60

Gly Ile Ile His Gly Val Thr His Asp Val Glu Leu Gln Glu Ser Val
65 70 75 80

Ile Thr Val Val Ala Ala Arg Val Leu Arg Gln Thr Pro Pro Leu Phe
85 90 95

Gln Ala Gly Arg Ser Gly Asp Gln Gly Leu Thr Ser Ile Arg Thr Pro
100 105 110

Leu Arg Cys Gly Val His Pro Gly Pro Gly Thr Phe Leu Phe Met Gly
115 120 125

Trp Ser Arg Phe Gly Glu Ala Arg Leu Gly Cys Ala Pro Arg Phe Gln
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Cys Glu Val Ala Leu His
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aatgtcctgt tacacagagt agaagcagat gttggtagcc gcgggaaaag ggatgagcgg 360

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gaccggcaat ctagagttgc tactggccga gggcccggac ctggctgggg gccgctgcat 660

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  1               5                  10                  15

ctc ctg gcc gcg tcc gct cac gct ggc tac tcg gaa gac cgc tgc agc       97
Leu Leu Ala Ala Ser Ala His Ala Gly Tyr Ser Glu Asp Arg Cys Ser
            20                  25                  30

tgg agg ggc agc ggt ttg acc cag gag cct ggc agc gtg ggg cag ctg      145
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Trp Arg Gly Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu
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acc ctg gac tgt act gag ggc gct atc gag tgg ctg tac cca gct ggg      193
Thr Leu Asp Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly
    50                  55                  60

gcg ctg cgc ctg acc ctg ggc ggc ccc gat ccg ggc aca cgg ccc agc      241
Ala Leu Arg Leu Thr Leu Gly Gly Pro Asp Pro Gly Thr Arg Pro Ser
65                  70                  75                  80

atc gtc tgt ctg cgc cca gag cgg ccc ttc gct ggt gcc cag gtc ttc      289
Ile Val Cys Leu Arg Pro Glu Arg Pro Phe Ala Gly Ala Gln Val Phe
                85                  90                  95

gct gaa cgt atg acc ggc aat cta gag ttg cta ctg gcc gag ggc ccg      337
Ala Glu Arg Met Thr Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Pro
            100                 105                 110

gac ctg gct ggg ggc cgc tgc atg cgc tgg ggt ccc cgc gag cgc cga      385
Asp Leu Ala Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg
        115                 120                 125

gcc ctt ttc ctg cag gcc aca cca cac cgc gac atc agc cgc aga gtt      433
Ala Leu Phe Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val
    130                 135                 140

gct gcc ttc cgt ttt gaa ctg cac gag gac caa cgt gca gaa atg tct      481
Ala Ala Phe Arg Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser
145                 150                 155                 160

ccc cag gct caa ggt ctt ggt gtg gat ggt gcc tgc agg ccc tgc agt      529
Pro Gln Ala Gln Gly Leu Gly Val Asp Gly Ala Cys Arg Pro Cys Ser
                165                 170                 175

gat gcc gag ctc ctc ctg gct gca tgc acc agt gat ttt gtg atc cac      577
Asp Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His
            180                 185                 190

ggg acc atc cat ggg gtc gcc cat gac aca gag ctg caa gaa tca gtc      625
Gly Thr Ile His Gly Val Ala His Asp Thr Glu Leu Gln Glu Ser Val
        195                 200                 205

atc act gtg gtg gtt gct cgt gtc atc cgc cag aca ctg cca ctg ttc      673
Ile Thr Val Val Val Ala Arg Val Ile Arg Gln Thr Leu Pro Leu Phe
    210                 215                 220

aag gaa ggg agc tcg gag ggc caa ggc cgg gcc tcc att cgt acc ttg      721
Lys Glu Gly Ser Ser Glu Gly Gln Gly Arg Ala Ser Ile Arg Thr Leu
225                 230                 235                 240

ctg cgc tgt ggt gtg cgt cct ggc cca ggc tcc ttc ctc ttc atg ggc      769
Leu Arg Cys Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly
                245                 250                 255
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Trp Ser Arg Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln
            260                 265                 270

gag ttc agc cgt gtc tat tca gct gct ctc acg acc cat ctc aac cca      865
Glu Phe Ser Arg Val Tyr Ser Ala Ala Leu Thr Thr His Leu Asn Pro
        275                 280                 285

tgt gag atg gca ctg gac tga gagacctggg agcaagccct ggatggacct         916
Cys Glu Met Ala Leu Asp
    290

tcttctggag atggggtgtt ggggagggtg atgggagggt gggtgagaag ggtgtggctc    976

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            20                  25                  30

Trp Arg Gly Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu
        35                  40                  45

Thr Leu Asp Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly
    50                  55                  60

Ala Leu Arg Leu Thr Leu Gly Gly Pro Asp Pro Gly Thr Arg Pro Ser
65                  70                  75                  80

Ile Val Cys Leu Arg Pro Glu Arg Pro Phe Ala Gly Ala Gln Val Phe
                85                  90                  95

Ala Glu Arg Met Thr Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Pro
            100                 105                 110
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Asp Leu Ala Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg
        115                 120                 125

Ala Leu Phe Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val
    130                 135                 140

Ala Ala Phe Arg Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser
145                 150                 155                 160

Pro Gln Ala Gln Gly Leu Gly Val Asp Gly Ala Cys Arg Pro Cys Ser
                165                 170                 175

Asp Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His
            180                 185                 190

Gly Thr Ile His Gly Val Ala His Asp Thr Glu Leu Gln Glu Ser Val
        195                 200                 205

Ile Thr Val Val Val Ala Arg Val Ile Arg Gln Thr Leu Pro Leu Phe
    210                 215                 220

Lys Glu Gly Ser Ser Glu Gly Gln Gly Arg Ala Ser Ile Arg Thr Leu
225                 230                 235                 240

Leu Arg Cys Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly
                245                 250                 255

Trp Ser Arg Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln
            260                 265                 270

Glu Phe Ser Arg Val Tyr Ser Ala Ala Leu Thr Thr His Leu Asn Pro
        275                 280                 285

Cys Glu Met Ala Leu Asp
    290
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            20                  25                  30

Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly
        35                  40                  45

Pro Asp Pro Gly Thr Arg Pro Ser Ile Val Cys Leu Arg Pro Glu Arg
    50                  55                  60

Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg Met Thr Gly Asn Leu
65                  70                  75                  80

Glu Leu Leu Leu Ala Glu Gly Pro Asp Leu Ala Gly Gly Arg Cys Met
                85                  90                  95

Arg Trp Gly Pro Arg Glu Arg Arg Ala Leu Phe Leu Gln Ala Thr Pro
            100                 105                 110

His Arg Asp Ile Ser Arg Arg Val Ala Ala Phe Arg Phe Glu Leu His
        115                 120                 125

Glu Asp Gln Arg Ala Glu Met Ser Pro Gln Ala Gln Gly Leu Gly Val
    130                 135                 140

Asp Gly Ala Cys Arg Pro Cys Ser Asp Ala Glu Leu Leu Leu Ala Ala
145                 150                 155                 160

Cys Thr Ser Asp Phe Val Ile His Gly Thr Ile His Gly Val Ala His
                165                 170                 175

Asp Thr Glu Leu Gln Glu Ser Val Ile Thr Val Val Val Ala Arg Val
            180                 185                 190

Ile Arg Gln Thr Leu Pro Leu Phe Lys Glu Gly Ser Ser Glu Gly Gln
        195                 200                 205
```

```
Gly Arg Ala Ser Ile Arg Thr Leu Leu Arg Cys Gly Val Arg Pro Gly
    210                 215                 220

Pro Gly Ser Phe Leu Phe Met Gly Trp Ser Arg Phe Gly Glu Ala Trp
225                 230                 235                 240

Leu Gly Cys Ala Pro Arg Phe Gln Glu Phe Ser Arg Val Tyr Ser Ala
                245                 250                 255

Ala Leu Thr Thr His Leu Asn Pro Cys Glu Met Ala Leu Asp
            260                 265                 270
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<210> 10
<211> 166
<212> PRT
<213> Mus musculus

<400> 10

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Ala Leu Phe Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val
1               5                   10                  15

Ala Ala Phe Arg Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser
            20                  25                  30

Pro Gln Ala Gln Gly Leu Gly Val Asp Gly Ala Cys Arg Pro Cys Ser
        35                  40                  45

Asp Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His
    50                  55                  60

Gly Thr Ile His Gly Val Ala His Asp Thr Glu Leu Gln Glu Ser Val
65                  70                  75                  80

Ile Thr Val Val Val Ala Arg Val Ile Arg Gln Thr Leu Pro Leu Phe
                85                  90                  95

Lys Glu Gly Ser Ser Glu Gly Gln Gly Arg Ala Ser Ile Arg Thr Leu
            100                 105                 110

Leu Arg Cys Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly
        115                 120                 125
```

Trp Ser Arg Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln
130 135 140

Glu Phe Ser Arg Val Tyr Ser Ala Ala Leu Thr Thr His Leu Asn Pro
145 150 155 160

Cys Glu Met Ala Leu Asp
165

<210> 11
<211> 2321
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (17)..(66)
<223> n is a, c, g, or t

<400> 11
tccccggttg tggggannnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnggca gcagcccgag ccccggcgcg tcccctaacc atgctggtag cggcgcttct 120

ctgcgcgctg tgctgcggcc tcttggctgc gtccgctcga gctggctact ccgaggaccg 180

ctgcagctgg aggggcaggt acccaggaga gattttgggg aggatttttg ttatttgtgt 240

tttaaattga aatcttgggt tggagggctc cctcccactt ggaactgagg aagcgcagac 300

ctcaatgtcc tgttccagag ggtggacgca ggtgttggtg gccgcgggaa aagggttgag 360

cgggctaggg aaatgagggc cacccacctg agaaccaccg tcctgtcccc agcggtttga 420

cccaggaacc tggcagcgtg gggcagctga ccctggattg tactgagggt gctatcgagt 480

ggctgtatcc agctggggcg ctgcgcctga ctctaggcgg ctctgatccg ggcacgcggc 540

ccagcatcgt ctgtctgcgc ccaacacggc ccttcgctgg tgcccaggtc ttcgctgaac 600

ggatggccgg caacctagag ttgctactgg ccgagggcca aggcctggct gggggccgct 660

gcatgcgctg gggtcctcgc gagcgccgag ccctttttcct gcaggccacg ccacaccggg 720

acatcagccg cagagttgct gccttccaat ttgaactgca cgaggaccaa cgtgcagaaa 780

tgtctcccca ggcccaaggt tttggtgtgg atggtgagtg actagactgg ctggggcgga 840

gctgggtgtc agaaactggc cctctacact ggcctgatcc gaatgggcct tgcctcccca 900

ctgcaccgaa agccctgtag cttgacggag gctactctgg tggagaacac agtggcttcc 960

aggtcatagg gaggtgagtt gagagttctc cctccttttct ctcctcctct tcaaggttcg 1020

gtttaggaaa agagcgggag ggggcagatg ccagagaggc cagccttggg tctctggttt 1080

ctgaagggtt ggggggaagg gttgggctgg ggcagaatca aagcctatgg ccgaagctgt 1140

ccagggctcc ctggccttgt ggtgacctcc ttcccctccc cctagcccaa ccaacaaaag 1200

tccagtgtgc ctcttcgtca ccatggagac tgcctgccct gcctcccggc agggcaccag 1260

gcccagtgct ttgctcttct ggaacttgtc tcctgaccct gcagggaatg gctctctgac 1320

tgctctgcca tagacagaga ccccagaagc agagtccact agaatatccc tggctggacc 1380

tgggaggcag ctctgggagg ttacagaaag ttccccagtg ttggtctgag tttctgagat 1440

gggtgtgcag gaatgtgtcc gaggcactga ggggcccatg agtagtcttc aggcagtgtg 1500

atgctgggag aagggtttag tcgccagctc ctgtaccttc tcctactgtg gggagctgtg 1560

ggcttgtgct gagagatcac aggcctgcct gatgacctgc cttgcatgct aggtgcctgc 1620

aggccctgca gtgatgccga gctccttctg actgcatgca ccagtgactt tggtgagtgt 1680

ttccgtcttg ggagagctta gggtctgccc cacattccca cgtgcccacc actggccacc 1740

atgtctcttc gtagtgatcc atgggaccat ccatggggtc gtccatgaca tggagctgca 1800

agaatcagtc atcactgtgg tggccactcg tgtcatccgc cagacactgc cactgttcca 1860

ggaagggagc tcggagggcc ggggccaggc ctccgttcgt accttgttgc gctgtggtgt 1920

gcgtcctggc ccaggctcct tcctcttcat gggctggagc cgatttggcg aagcttggct 1980

gggctgcgct ccccgcttcc aagagttcag ccgtgtctat tcagctgctc tcgcggccca 2040

cctcaaccca tgtgaggtgg cactggactg agagacctgg gagcaagccc tggatggatc 2100

ttcctctggg gatggggtgt tggggagggg tgataggagg gtgggtggga agggtgtggc 2160

tcagatggca tcctggtacc cacagtgagg tggtagaata ctaaataacc tggatcacac 2220

cagccactgt agacatggtc ttctgtgaca ggcaggctca ctcagctctg ctcctgcctc 2280

actttaccta ctctccagtc tgctgccctt ctgacccttc t 2321

<210> 12
<211> 1026
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (1)..(876)

<400> 12

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atg ctg gta gcg gcg ctt ctc tgc gcg ctg tgc tgc ggc ctc ttg gct       48
Met Leu Val Ala Ala Leu Leu Cys Ala Leu Cys Cys Gly Leu Leu Ala
1               5                   10                  15

gcg tcc gct cga gct ggc tac tcc gag gac cgc tgc agc tgg agg ggc       96
Ala Ser Ala Arg Ala Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly
            20                  25                  30

agc ggt ttg acc cag gaa cct ggc agc gtg ggg cag ctg acc ctg gat      144
Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp
        35                  40                  45

tgt act gag ggt gct atc gag tgg ctg tat cca gct ggg gcg ctg cgc      192
Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg
    50                  55                  60

ctg act cta ggc ggc tct gat ccg ggc acg cgg ccc agc atc gtc tgt      240
Leu Thr Leu Gly Gly Ser Asp Pro Gly Thr Arg Pro Ser Ile Val Cys
65                  70                  75                  80

ctg cgc cca aca cgg ccc ttc gct ggt gcc cag gtc ttc gct gaa cgg      288
Leu Arg Pro Thr Arg Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg
                85                  90                  95

atg gcc ggc aac cta gag ttg cta ctg gcc gag ggc caa ggc ctg gct      336
Met Ala Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Gln Gly Leu Ala
            100                 105                 110

ggg ggc cgc tgc atg cgc tgg ggt cct cgc gag cgc cga gcc ctt ttc      384
Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg Ala Leu Phe
        115                 120                 125

ctg cag gcc acg cca cac cgg gac atc agc cgc aga gtt gct gcc ttc      432
Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val Ala Ala Phe
    130                 135                 140

caa ttt gaa ctg cac gag gac caa cgt gca gaa atg tct ccc cag gcc      480
Gln Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser Pro Gln Ala
145                 150                 155                 160

caa ggt ttt ggt gtg gat ggt gcc tgc agg ccc tgc agt gat gcc gag      528
Gln Gly Phe Gly Val Asp Gly Ala Cys Arg Pro Cys Ser Asp Ala Glu
                165                 170                 175

ctc ctt ctg act gca tgc acc agt gac ttt gtg atc cat ggg acc atc      576
Leu Leu Leu Thr Ala Cys Thr Ser Asp Phe Val Ile His Gly Thr Ile
            180                 185                 190
```

```
cat ggg gtc gtc cat gac atg gag ctg caa gaa tca gtc atc act gtg      624
His Gly Val Val His Asp Met Glu Leu Gln Glu Ser Val Ile Thr Val
        195                 200                 205

gtg gcc act cgt gtc atc cgc cag aca ctg cca ctg ttc cag gaa ggg      672
Val Ala Thr Arg Val Ile Arg Gln Thr Leu Pro Leu Phe Gln Glu Gly
    210                 215                 220

agc tcg gag ggc cgg ggc cag gcc tcc gtt cgt acc ttg ttg cgc tgt      720
Ser Ser Glu Gly Arg Gly Gln Ala Ser Val Arg Thr Leu Leu Arg Cys
225                 230                 235                 240

ggt gtg cgt cct ggc cca ggc tcc ttc ctc ttc atg ggc tgg agc cga      768
Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly Trp Ser Arg
                245                 250                 255

ttt ggc gaa gct tgg ctg ggc tgc gct ccc cgc ttc caa gag ttc agc      816
Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln Glu Phe Ser
            260                 265                 270

cgt gtc tat tca gct gct ctc gcg gcc cac ctc aac cca tgt gag gtg      864
Arg Val Tyr Ser Ala Ala Leu Ala Ala His Leu Asn Pro Cys Glu Val
        275                 280                 285

gca ctg gac tga gagacctggg agcaagccct ggatggatct tcctctgggg          916
Ala Leu Asp
    290

atggggtgtt ggggaggggt gataggaggg tgggtgggaa gggtgtggct cagatggcat    976

cctggtaccc acagtgaggt ggtagaatac taaataacct ggatcacacc              1026
```

<210> 13
<211> 291
<212> PRT
<213> Rattus norvegicus

<400> 13

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Met Leu Val Ala Ala Leu Leu Cys Ala Leu Cys Cys Gly Leu Leu Ala
1               5                   10                  15

Ala Ser Ala Arg Ala Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly
            20                  25                  30

Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp
        35                  40                  45

Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg
```

```
    50                  55                  60

Leu Thr Leu Gly Gly Ser Asp Pro Gly Thr Arg Pro Ser Ile Val Cys
65                  70                  75                  80

Leu Arg Pro Thr Arg Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg
                85                  90                  95

Met Ala Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Gln Gly Leu Ala
            100                 105                 110

Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg Ala Leu Phe
        115                 120                 125

Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val Ala Ala Phe
    130                 135                 140

Gln Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser Pro Gln Ala
145                 150                 155                 160

Gln Gly Phe Gly Val Asp Gly Ala Cys Arg Pro Cys Ser Asp Ala Glu
                165                 170                 175

Leu Leu Leu Thr Ala Cys Thr Ser Asp Phe Val Ile His Gly Thr Ile
            180                 185                 190

His Gly Val Val His Asp Met Glu Leu Gln Glu Ser Val Ile Thr Val
        195                 200                 205

Val Ala Thr Arg Val Ile Arg Gln Thr Leu Pro Leu Phe Gln Glu Gly
    210                 215                 220

Ser Ser Glu Gly Arg Gly Gln Ala Ser Val Arg Thr Leu Leu Arg Cys
225                 230                 235                 240

Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly Trp Ser Arg
                245                 250                 255

Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln Glu Phe Ser
            260                 265                 270
```

```
Arg Val Tyr Ser Ala Ala Leu Ala Ala His Leu Asn Pro Cys Glu Val
        275                 280                 285

Ala Leu Asp
    290
```

<210> 14
<211> 275
<212> PRT
<213> Rattus norvegicus

<220>
<221> MISC_FEATURE
<222> (1)..(5)
<223> Potentially part of signal peptide

<400> 14

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Ala Ser Ala Arg Ala Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly
1               5                   10                  15

Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp
            20                  25                  30

Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg
        35                  40                  45

Leu Thr Leu Gly Gly Ser Asp Pro Gly Thr Arg Pro Ser Ile Val Cys
    50                  55                  60

Leu Arg Pro Thr Arg Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg
65                  70                  75                  80

Met Ala Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Gln Gly Leu Ala
                85                  90                  95

Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg Ala Leu Phe
            100                 105                 110

Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val Ala Ala Phe
        115                 120                 125
```

```
Gln Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser Pro Gln Ala
    130                 135                 140

Gln Gly Phe Gly Val Asp Gly Ala Cys Arg Pro Cys Ser Asp Ala Glu
145                 150                 155                 160

Leu Leu Leu Thr Ala Cys Thr Ser Asp Phe Val Ile His Gly Thr Ile
                165                 170                 175

His Gly Val Val His Asp Met Glu Leu Gln Glu Ser Val Ile Thr Val
            180                 185                 190

Val Ala Thr Arg Val Ile Arg Gln Thr Leu Pro Leu Phe Gln Glu Gly
        195                 200                 205

Ser Ser Glu Gly Arg Gly Gln Ala Ser Val Arg Thr Leu Leu Arg Cys
    210                 215                 220

Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly Trp Ser Arg
225                 230                 235                 240

Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln Glu Phe Ser
                245                 250                 255

Arg Val Tyr Ser Ala Ala Leu Ala Ala His Leu Asn Pro Cys Glu Val
            260                 265                 270

Ala Leu Asp
        275
```

<210> 15
<211> 166
<212> PRT
<213> Rattus norvegicus

<400> 15

```
Ala Leu Phe Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val
1               5                   10                  15

Ala Ala Phe Gln Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser
            20                  25                  30
```

```
Pro Gln Ala Gln Gly Phe Gly Val Asp Gly Ala Cys Arg Pro Cys Ser
        35                  40                  45

Asp Ala Glu Leu Leu Leu Thr Ala Cys Thr Ser Asp Phe Val Ile His
    50                  55                  60

Gly Thr Ile His Gly Val Val His Asp Met Glu Leu Gln Glu Ser Val
65                  70                  75                  80

Ile Thr Val Val Ala Thr Arg Val Ile Arg Gln Thr Leu Pro Leu Phe
                85                  90                  95

Gln Glu Gly Ser Ser Glu Gly Arg Gly Gln Ala Ser Val Arg Thr Leu
            100                 105                 110

Leu Arg Cys Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly
        115                 120                 125

Trp Ser Arg Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln
    130                 135                 140

Glu Phe Ser Arg Val Tyr Ser Ala Ala Leu Ala Ala His Leu Asn Pro
145                 150                 155                 160

Cys Glu Val Ala Leu Asp
                165
```

<210> 16
<211> 498
<212> DNA
<213> Homo sapiens

<400> 16
gccctcttcc tgcaggccac gccgcaccag gacatcagcc gccgcgtggc cgccttccgc 60

tttgagctgc gcgaggacgg gcgccccgag ctgcccccgc aggcccacgg tctcggcgta 120

gacggtgcct gcaggccctg cagcgacgct gagctgctcc tggccgcatg caccagcgac 180

ttcgtaattc acgggatcat ccatggggtc acccatgacg tggagctgca ggagtctgtc 240

atcactgtgg tggccgcccg tgtcctccgc cagacaccgc cgctgttcca ggcggggcga 300

tccggggacc aggggctgac ctccattcgt accccactgc gctgtggcgt ccacccgggc 360

ccaggcacct tcctcttcat gggctggagc cgctttgggg aggcccggct gggctgtgcc 420

ccacgattcc aggagttccg ccgtgcctac gaggctgccc gtgctgccca cctccacccc 480

tgcgaggtgg cgctgcac 498

<210> 17
<211> 498
<212> DNA
<213> Mus musculus

<400> 17
gccctttcc tgcaggccac accacaccgc gacatcagcc gcagagttgc tgccttccgt 60

tttgaactgc acgaggacca acgtgcagaa atgtctcccc aggctcaagg tcttggtgtg 120

gatggtgcct gcaggccctg cagtgatgcc gagctcctcc tggctgcatg caccagtgat 180

tttgtgatcc acgggaccat ccatggggtc gcccatgaca cagagctgca agaatcagtc 240

atcactgtgg tggttgctcg tgtcatccgc cagacactgc cactgttcaa ggaagggagc 300

tcggagggcc aaggccgggc ctccattcgt accttgctgc gctgtggtgt gcgtcctggc 360

ccaggctcct tcctcttcat gggctggagc cgatttggcg aagcttggct gggctgtgct 420

ccccgcttcc aagagttcag ccgtgtctat tcagctgctc tcacgaccca tctcaaccca 480

tgtgagatgg cactggac 498

<210> 18
<211> 498
<212> DNA
<213> Rattus norvegicus

<400> 18
gccctttcc tgcaggccac gccacaccgg gacatcagcc gcagagttgc tgccttccaa 60

tttgaactgc acgaggacca acgtgcagaa atgtctcccc aggcccaagg ttttggtgtg 120

gatggtgcct gcaggccctg cagtgatgcc gagctccttc tgactgcatg caccagtgac 180

tttgtgatcc atgggaccat ccatggggtc gtccatgaca tggagctgca agaatcagtc 240

atcactgtgg tggccactcg tgtcatccgc cagacactgc cactgttcca ggaagggagc 300

tcggagggcc ggggccaggc ctccgttcgt accttgttgc gctgtggtgt gcgtcctggc 360

ccaggctcct tcctcttcat gggctggagc cgatttggcg aagcttggct gggctgcgct 420

ccccgcttcc aagagttcag ccgtgtctat tcagctgctc tcgcggccca cctcaaccca 480

tgtgaggtgg cactggac 498

<210> 19
<211> 104
<212> PRT
<213> Homo sapiens

<400> 19

Gly Tyr Ser Glu Glu Arg Cys Ser Trp Arg Gly Ser Gly Leu Thr Gln
1 5 10 15

Glu Pro Gly Ser Val Gly Gln Leu Ala Leu Ala Cys Ala Glu Gly Ala
20 25 30

Val Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly
35 40 45

Pro Asp Pro Arg Ala Arg Pro Gly Ile Ala Cys Leu Arg Pro Val Arg
50 55 60

Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg Ala Gly Gly Ala Leu
65 70 75 80

Glu Leu Leu Leu Ala Glu Gly Pro Gly Pro Ala Gly Gly Arg Cys Val
85 90 95

Arg Trp Gly Pro Arg Glu Arg Arg
100

<210> 20
<211> 104
<212> PRT
<213> Mus musculus

<400> 20

Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly Ser Gly Leu Thr Gln
1 5 10 15

Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp Cys Thr Glu Gly Ala
20 25 30

Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly
35 40 45

Pro Asp Pro Gly Thr Arg Pro Ser Ile Val Cys Leu Arg Pro Glu Arg
50 55 60

Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg Met Thr Gly Asn Leu
65 70 75 80

Glu Leu Leu Leu Ala Glu Gly Pro Asp Leu Ala Gly Gly Arg Cys Met
85 90 95

Arg Trp Gly Pro Arg Glu Arg Arg
100

<210> 21
<211> 109
<212> PRT
<213> Rattus norvegicus

<220>
<221> MISC_FEATURE
<222> (1)..(5)
<223> Potentially part of signal peptide

<400> 21

Ala Ser Ala Arg Ala Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly
1 5 10 15

Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp
20 25 30

Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg
35 40 45

Leu Thr Leu Gly Gly Ser Asp Pro Gly Thr Arg Pro Ser Ile Val Cys
50 55 60

Leu Arg Pro Thr Arg Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg
65 70 75 80

Met Ala Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Gln Gly Leu Ala

85 90 95

Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg
100 105

<210> 22
<211> 97
<212> PRT
<213> Homo sapiens

<400> 22

Gly Tyr Ser Glu Glu Arg Cys Ser Trp Arg Gly Ser Gly Leu Thr Gln
1 5 10 15

Glu Pro Gly Ser Val Gly Gln Leu Ala Leu Ala Cys Ala Glu Gly Ala
20 25 30

Val Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly
35 40 45

Pro Asp Pro Arg Ala Arg Pro Gly Ile Ala Cys Leu Arg Pro Val Arg
50 55 60

Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg Ala Gly Gly Ala Leu
65 70 75 80

Glu Leu Leu Leu Ala Glu Gly Pro Gly Pro Ala Gly Gly Arg Cys Val
85 90 95

Arg

<210> 23
<211> 97
<212> PRT
<213> Mus musculus

<400> 23

Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly Ser Gly Leu Thr Gln
1 5 10 15

Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp Cys Thr Glu Gly Ala

```
            20                  25                  30

Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly
        35                  40                  45

Pro Asp Pro Gly Thr Arg Pro Ser Ile Val Cys Leu Arg Pro Glu Arg
    50                  55                  60

Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg Met Thr Gly Asn Leu
65                  70                  75                  80

Glu Leu Leu Leu Ala Glu Gly Pro Asp Leu Ala Gly Gly Arg Cys Met
                85                  90                  95

Arg
```

<210> 24
<211> 102
<212> PRT
<213> Rattus norvegicus

<220>
<221> MISC_FEATURE
<222> (1)..(5)
<223> Potentially part of signal peptide

<400> 24

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Ala Ser Ala Arg Ala Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly
1               5                   10                  15

Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp
            20                  25                  30

Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg
        35                  40                  45

Leu Thr Leu Gly Gly Ser Asp Pro Gly Thr Arg Pro Ser Ile Val Cys
    50                  55                  60

Leu Arg Pro Thr Arg Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg
65                  70                  75                  80
```

```
Met Ala Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Gln Gly Leu Ala
                85                  90                  95

Gly Gly Arg Cys Met Arg
            100
```

<210> 25
<211> 1363
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (84)..(959)

<400> 25

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gggcagccgc gccgcgggct gctcgcgctg cggccccgac cctcccgggg cagcagtccg     60

aggccccggc gcgtccccta acc atg ctg gta gcc acg ctt ctt tgc gcg ctc    113
                          Met Leu Val Ala Thr Leu Leu Cys Ala Leu
                          1               5                   10

tgt tgc ggc ctc ctg gcc gcg tcc gct cac gct ggc tac tcg gaa gac      161
Cys Cys Gly Leu Leu Ala Ala Ser Ala His Ala Gly Tyr Ser Glu Asp
                15                  20                  25

cgc tgc agc tgg agg ggc agc ggt ttg acc cag gag cct ggc agc gtg      209
Arg Cys Ser Trp Arg Gly Ser Gly Leu Thr Gln Glu Pro Gly Ser Val
            30                  35                  40

ggg cag ctg acc ctg gac tgt act gag ggc gct atc gag tgg ctg tac      257
Gly Gln Leu Thr Leu Asp Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr
        45                  50                  55

cca gct ggg gcg ctg cgc ctg acc ctg ggc ggc ccc gat ccg ggc aca      305
Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly Pro Asp Pro Gly Thr
    60                  65                  70

cgg ccc agc atc gtc tgt ctg cgc cca gag cgg ccc ttc gct ggt gcc      353
Arg Pro Ser Ile Val Cys Leu Arg Pro Glu Arg Pro Phe Ala Gly Ala
75                  80                  85                  90

cag gtc ttc gct gaa cgt atg acc ggc aat cta gag ttg cta ctg gcc      401
Gln Val Phe Ala Glu Arg Met Thr Gly Asn Leu Glu Leu Leu Leu Ala
                95                  100                 105

gag ggc ccg gac ctg gct ggg ggc cgc tgc atg cgc tgg ggt ccc cgc      449
Glu Gly Pro Asp Leu Ala Gly Gly Arg Cys Met Arg Trp Gly Pro Arg
            110                 115                 120
```

```
gag cgc cga gcc ctt ttc ctg cag gcc aca cca cac cgc gac atc agc      497
Glu Arg Arg Ala Leu Phe Leu Gln Ala Thr Pro His Arg Asp Ile Ser
        125                 130                 135

cgc aga gtt gct gcc ttc cgt ttt gaa ctg cac gag gac caa cgt gca      545
Arg Arg Val Ala Ala Phe Arg Phe Glu Leu His Glu Asp Gln Arg Ala
    140                 145                 150

gaa atg tct ccc cag gct caa ggt ctt ggt gtg gat ggt gcc tgc agg      593
Glu Met Ser Pro Gln Ala Gln Gly Leu Gly Val Asp Gly Ala Cys Arg
155                 160                 165                 170

ccc tgc agt gat gcc gag ctc ctc ctg gct gca tgc acc agt gat ttt      641
Pro Cys Ser Asp Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe
                175                 180                 185

gtg atc cac ggg acc atc cat ggg gtc gcc cat gac aca gag ctg caa      689
Val Ile His Gly Thr Ile His Gly Val Ala His Asp Thr Glu Leu Gln
            190                 195                 200

gaa tca gtc atc act gtg gtg gtt gct cgt gtc atc cgc cag aca ctg      737
Glu Ser Val Ile Thr Val Val Val Ala Arg Val Ile Arg Gln Thr Leu
        205                 210                 215

cca ctg ttc aag gaa ggg agc tcg gag ggc caa ggc cgg gcc tcc att      785
Pro Leu Phe Lys Glu Gly Ser Ser Glu Gly Gln Gly Arg Ala Ser Ile
    220                 225                 230

cgt acc ttg ctg cgc tgt ggt gtg cgt cct ggc cca ggc tcc ttc ctc      833
Arg Thr Leu Leu Arg Cys Gly Val Arg Pro Gly Pro Gly Ser Phe Leu
235                 240                 245                 250

ttc atg ggc tgg agc cga ttt ggc gaa gct tgg ctg ggc tgt gct ccc      881
Phe Met Gly Trp Ser Arg Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro
                255                 260                 265

cgc ttc caa gag ttc agc cgt gtc tat tca gct gct ctc acg acc cat      929
Arg Phe Gln Glu Phe Ser Arg Val Tyr Ser Ala Ala Leu Thr Thr His
            270                 275                 280

ctc aac cca tgt gag atg gca ctg gac tga gagacctggg agcaagccct        979
Leu Asn Pro Cys Glu Met Ala Leu Asp
        285                 290

ggatggacct tcttctggag atggggtgtt ggggagggtg atgggagggt gggtgagaag   1039

ggtgtggctc ggatggcatc ctggtaccca cagtgagctg gtagaatact aagtaatctg   1099

gaccatacca gccactgtag tcatggtctt ctgtggcagg cagcataccc agctctgtgc   1159

ctgcctcact ttgtctactc tccagtctgc tgcccttcta acccttctta gcctgctgac   1219

cagtgagctc atgttttcct cgaattccag ggtgctgctg gggttcagag caaccgtgcc   1279
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gtagtttgga agacttgagc taattgtttt ttttttgttt gttttttttgt ttgtttaaag 1339

gtggcctggg gggggcggca aaca 1363

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<213> Mus musculus

<400> 26

Met Leu Val Ala Thr Leu Leu Cys Ala Leu Cys Cys Gly Leu Leu Ala
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Ala Ser Ala His Ala Gly Tyr Ser Glu Asp Arg Cys Ser Trp Arg Gly
20 25 30

Ser Gly Leu Thr Gln Glu Pro Gly Ser Val Gly Gln Leu Thr Leu Asp
35 40 45

Cys Thr Glu Gly Ala Ile Glu Trp Leu Tyr Pro Ala Gly Ala Leu Arg
50 55 60

Leu Thr Leu Gly Gly Pro Asp Pro Gly Thr Arg Pro Ser Ile Val Cys
65 70 75 80

Leu Arg Pro Glu Arg Pro Phe Ala Gly Ala Gln Val Phe Ala Glu Arg
85 90 95

Met Thr Gly Asn Leu Glu Leu Leu Leu Ala Glu Gly Pro Asp Leu Ala
100 105 110

Gly Gly Arg Cys Met Arg Trp Gly Pro Arg Glu Arg Arg Ala Leu Phe
115 120 125

Leu Gln Ala Thr Pro His Arg Asp Ile Ser Arg Arg Val Ala Ala Phe
130 135 140

Arg Phe Glu Leu His Glu Asp Gln Arg Ala Glu Met Ser Pro Gln Ala
145 150 155 160

Gln Gly Leu Gly Val Asp Gly Ala Cys Arg Pro Cys Ser Asp Ala Glu

```
                165                 170                 175

Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe Val Ile His Gly Thr Ile
            180                 185                 190

His Gly Val Ala His Asp Thr Glu Leu Gln Glu Ser Val Ile Thr Val
        195                 200                 205

Val Val Ala Arg Val Ile Arg Gln Thr Leu Pro Leu Phe Lys Glu Gly
    210                 215                 220

Ser Ser Glu Gly Gln Gly Arg Ala Ser Ile Arg Thr Leu Leu Arg Cys
225                 230                 235                 240

Gly Val Arg Pro Gly Pro Gly Ser Phe Leu Phe Met Gly Trp Ser Arg
                245                 250                 255

Phe Gly Glu Ala Trp Leu Gly Cys Ala Pro Arg Phe Gln Glu Phe Ser
            260                 265                 270

Arg Val Tyr Ser Ala Ala Leu Thr Thr His Leu Asn Pro Cys Glu Met
        275                 280                 285

Ala Leu Asp
    290


<210>  27
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<220>
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<223>  Conserved strong group of NsG33

<400>  27

Asn Glu Gln Lys
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<210>  28
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<213> homo sapiens

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<400> 28

Asn His Gln Lys
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<210> 29
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Asn Asp Glu Gln
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Gln His Arg Lys
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Met Ile Leu Val
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Met Ile Leu Phe
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Ser Thr Asn Lys
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Ser Thr Pro Ala
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<400> 35

Ser Gly Asn Asp
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<210> 36
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<400> 36

Ser Asn Asp Glu Gln Lys
1 5

<210> 37
<211> 6
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<400> 37

Asn Asp Glu Gln His Lys
1 5

<210> 38
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<400> 38

Asn Glu Gln His Arg Lys
1 5

<210> 39
<211> 4
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<400> 39

Val Leu Ile Met
1

<210> 40
<211> 311
<212> PRT
<213> Homo sapiens

<400> 40

Met Arg Gly Ala Ala Arg Ala Ala Trp Gly Arg Ala Gly Gln Pro Trp
1 5 10 15

Pro Arg Pro Pro Ala Pro Gly Pro Pro Pro Pro Pro Leu Pro Leu Leu
20 25 30

Leu Leu Leu Leu Ala Gly Leu Leu Gly Gly Ala Gly Ala Gln Tyr Ser
35 40 45

Ser Asp Arg Cys Ser Trp Lys Gly Ser Gly Leu Thr His Glu Ala His
50 55 60

Arg Lys Glu Val Glu Gln Val Tyr Leu Arg Cys Ala Ala Gly Ala Val
65 70 75 80

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Glu Trp Met Tyr Pro Thr Gly Ala Leu Ile Val Asn Leu Arg Pro Asn
                85                  90                  95

Thr Phe Ser Pro Ala Arg His Leu Thr Val Cys Ile Arg Ser Phe Thr
            100                 105                 110

Asp Ser Ser Gly Ala Asn Ile Tyr Leu Glu Lys Thr Gly Glu Leu Arg
        115                 120                 125

Leu Leu Val Pro Asp Gly Asp Gly Arg Pro Gly Arg Val Gln Cys Phe
    130                 135                 140

Gly Leu Glu Gln Gly Gly Leu Phe Val Glu Ala Thr Pro Gln Gln Asp
145                 150                 155                 160

Ile Gly Arg Arg Thr Thr Gly Phe Gln Tyr Glu Leu Val Arg Arg His
                165                 170                 175

Arg Ala Ser Asp Leu His Glu Leu Ser Ala Pro Cys Arg Pro Cys Ser
            180                 185                 190

Asp Thr Glu Val Leu Leu Ala Val Cys Thr Ser Asp Phe Ala Val Arg
        195                 200                 205

Gly Ser Ile Gln Gln Val Thr His Glu Pro Glu Arg Gln Asp Ser Ala
    210                 215                 220

Ile His Leu Arg Val Ser Arg Leu Tyr Arg Gln Lys Ser Arg Val Phe
225                 230                 235                 240

Glu Pro Val Pro Glu Gly Asp Gly His Trp Gln Gly Arg Val Arg Thr
                245                 250                 255

Leu Leu Glu Cys Gly Val Arg Pro Gly His Gly Asp Phe Leu Phe Thr
            260                 265                 270

Gly His Met His Phe Gly Glu Ala Arg Leu Gly Cys Ala Pro Arg Phe
        275                 280                 285

Lys Asp Phe Gln Arg Met Tyr Arg Asp Ala Gln Glu Arg Gly Leu Asn
    290                 295                 300
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Pro Cys Glu Val Gly Thr Asp
305 310

<210> 41
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<400> 41

Ala Arg Ala Gly Tyr
1 5

<210> 42
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<213> homo sapiens

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<400> 42

Trp Gly Pro Arg Glu Arg Arg Ala Leu
1 5

<210> 43
<211> 8
<212> PRT
<213> homo sapiens

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<223> NsG33 cleavage sequence motif

<400> 43

Gly Gly Arg Cys Val Arg Trp Gly
1 5

<210> 44
<211> 8
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<213> Rattus norvegicus

<220>
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<400> 44

Gly Tyr Ser Glu Asp Arg Cys Ser
1 5

<210> 45
<211> 10
<212> PRT
<213> Rattus norvegicus

<220>
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<400> 45

Ala Ser Ala Arg Ala Gly Tyr Ser Glu Asp
1 5 10

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<400> 46
gcggatccag cggtggtgag agccccgac 29

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<400> 47
tatactcgag gcccaccctc cctcctacca g 31

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ccagcgactt cgtaattcac 20

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<400> 49
agcccatgaa gaggaagg 18

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tgtgctcgcg ctactctctc 20

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ctgaatgctc cacttttttca attct 25

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ctgattcttg cagctctgtg 20

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aacagcaact cccactcttc 20

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tggtccaggg tttcttactc 20

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<400> 56
ggaaggtgaa ggtcggagtc aa 22

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<400> 57
gatctcgctc ctggaagatg gt 22

<210> 58
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<400> 58

Asn Glu Asp Gln
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<210> 59
<211> 5
<212> PRT
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<223> Conserved weak group of NsG33

<400> 59

Asn Glu Gln His Lys
1 5